Contents

1 Combat - Assumed Content And Requirements

2 Assumed content and requirements

2.1 Siege combat

1. This handbook must be read in conjunction with the Kingdom of Lochac Armoured Combat Fighters? and Marshals' Handbooks.
2. All requirements contained here are in addition to the requirements stated there.
3. If there is an unaddressed inconsistency in requirements between the armoured combat rules and the siege combat rules, the stricter standard will apply.

2.2 Consistency with Society rules

1. The Society Siege Engine Handbook is a reference for this handbook and, where relevant, has been recreated here.
2. These rules maintain consistency with Society rules as far as possible, but Lochac has exemptions in some areas of combat, so this document is designed to not require you to read the Society rules to be able to use siege engines in Lochac.

2.3 Consistency with mundane law

1. There are different legal prohibitions within mundane jurisdictions within the Kingdom, so these rules do not set out what is and is not permitted by mundane law.
2. These rules describe siege engines and munitions and their use under the presumption that they are permitted in your jurisdiction. This does not give you permission to use siege engines where they are prohibited by mundane law.
3. The Lochac Siege Marshal may publish (and attempt to keep current) details on what engines are legal in which parts of the Kingdom, but you will will bear the final responsibility.
4. If siege activities are planned, the marshal-in-charge is responsible for knowing what siege engines are permitted at the event, if any.
5. If you want to bring siege engines to an event, you must ensure that siege engines are permitted at the venue and in all locations that you will travel through to get to the event.

6. SCANZ Inc or SCA Ltd Australia are not responsible if you encounter legal issues in transporting siege equipment.

3 Combat - Chain Of Command and Reporting

4 Chain of Command and Reporting

4.1 Chain of command

1. Combat siege takes place on the armoured combat field, so falls under the jurisdiction of the armoured combat marshallate.
2. Siege marshals will work under the marshal-in-charge of that activity - eg in a war scenario, the siege marshals escalate to the marshal-in-charge.
3. Where there are siege-specific issues, the armored combat marshal at each level may request advice from siege marshals.
4. Both the Kingdom Armoured Combat Marshal and the Kingdom Siege Marshal should be involved for escalated issues that relate to siege on the armoured combat field
5. Because siege includes both combat and target siege, the Deputy Earl Marshal for Siege (Kingdom Siege Marshal) is a deputy of the Earl Marshal directly, not a deputy of the Kingdom Armoured Combat Marshal.

4.2 Reporting

4.2.1 Event reporting

1. Armoured combat activities that include the use of siege should also be reported to the relevant siege marshal. This can be achieved by submitting a copy of the same report that is made to the relevant armoured combat marshal. If there is no equivalent siege marshal at group level, send the report directly to the Kingdom Siege Marshal.
2. Injuries and accidents specifically related to siege crew or equipment should be reported to the Lochac Siege Marshal by the marshal-in-charge of the event, by the Group Siege Marshal, or any other marshal with reporting requirements immediately after the event, in addition to any other reporting requirments.
3. Any injury that requires professional medical attention resulting from siege activities must be reported to the Society Siege Marshal immediately after the event, in addition to any other reporting requirments.

4.2.2 Group reporting

1. If a group has an office of Group Siege Marshal, this office reports quarterly on the same reporting schedule as their armoured combat counterpart.
2. The Kingdom Siege Marshal will let you know if there are specific reporting requirements.

4.2.3 Kingdom reporting

1. The Kingdom Siege Marshal reports quarterly to the Kingdom Earl Marshal and the Society Marshal?s Deputy for Siege (Society Siege Marshal).
2. The content and format for reporting are set by the upline Kingdom and Society officers.
3. If the Kingdom Siege Marshal (or Earl Marshal) is notified of any injury that requires professional medical attention resulting from siege activities, it must be reported to the Society Siege Marshal immediately after the event, in addition to any other reporting requirements.

5 Combat - Authorisation And Marshalling

5.1 Siege engine authorisation

1. Lochac has a weapon-specific authorisation for siege engines, that makes you a siege engineer.
2. If you want to authorise in siege, you must also hold an authorisation for armored combatant, or plumed participant.
3. Additional requirements for siege authorisation include demonstrating:
   (a) understanding of the rules for siege.
   (b) the ability to safely operate an engine.
   (c) the ability to inspect an engine for safety.
   (d) the ability to render an engine safe.
   (e) Understanding of how engines/engineers are killed by opponents.
4. Prospective engineers should be observed for at least 1 battle before authorisations are made final.

5.2 Marshalling siege combat

1. An authorised siege marshal must:
   (a) oversee the inspection of engines and operators.
   (b) be present on any field where siege engines are in use.
2. During combat there must be at least 1 siege marshal for each end of the field that has a siege engine.
   (a) We recommended at least 1 siege marshal for every 3 engines in use.
3. The armour requirements for marshals when siege is being used in combat are listed in the non-combatant armour requirements section of the Armoured Combat Fighters' Handbook.

5.3 Requirements for authorising as a siege marshal

To authorise as a siege marshal, you must:

1. Be over the age of 18.
2. Be a subscribing member of the SCA or its affilliates.
   (a) Your authorisation to marshal will lapse while you do not hold a valid subscribing membership.
3. Be currently authorised in siege combat and have at least 1 year or 4 events of experience as a siege engineer, or
4. Have completed an appropriate siege marshal training program.
5. Have a basic understanding of all major engine types employed:
   - ballista/arbalest
   - catapult/onager
   - trebuchet (both counterweight and man-powered).
6. Know how to inspect engines and ammunition.
7. Know the current siege engine regulations.
8. Know the basics of armoured combat marshalling (see [[Armoured_Combat:Handbook|the Armored Combat Marshals' Handbook).
   (a) Being an authorised armoured combat marshal is recommended, but not required.
9. Be able to conduct yourself safely on the field.

6 Combat - Siege Ammunition Damage

7 Siege Ammunition Damage

The rules for damage to people and shields is entirely incorporated in to the Armoured Combat rules. See the section on Effects of blows, (6.4.2.i), and 6.5 Effects of missle weapons. Need to check if trees are mentioned

7.1 Damage to structures

1. Small siege ammunition is capable of damaging or destroying light structures such as other siege engines, pavices, siege towers, etc., provided that scenario rules permit this.
2. Large siege ammunition is capable of damaging or destroying any type of structure such as castle walls, towers, redoubts, etc., provided that scenario rules permit this.

7.2 Recommendations for damage to structures from siege engines

1. Since some structures are not easily modifiable during the course of combat, these recommendations should only be applied in situations where they would be practicable.
2. The numbers given below should be modified based on the number of engines participating in any given scenario.
3. Breaching walls, destroying towers, and other permanent structures could be accomplished by hitting the structure 5 times with large siege ammunition, and these structures could be immune from damage by small siege projectiles.
4. Gates could be destroyed upon 3 hits from large siege ammunition, and could be immune to small siege ammunition.
5. Temporary siege structures and siege engines should be considered destroyed by 1 hit from large siege ammunition or by 3 hits from small siege ammunition.
6. If a manned tower or siege structure is destroyed, all occupants of the structure could be considered killed as well.
7. If a siege structure is destroyed, it is recommended that any crew in physical contact with the engine be considered killed as well.

8 Combat - Siege Engines and Structures

9 Siege Engines and Structures

9.1 Types of siege devices

There are two types of siege devices:

- active siege engines
- passive siege structures.

9.1.1 Siege engines

1. To avoid confusion, siege engines are defined as those designed to deliver ammunition larger than small arms ammunition.
2. Siege engines are broken down into two categories.
   (a) Type A engines are designed to deliver large ammunition to a range between 37 and 74 metres.
      i. Type A engines can use all approved ammunition classes.
   (b) Type B engines are designed to deliver small siege ammunition to a range between 37 and 74 metres.
      i. Type B engines are not allowed to use anything larger than small siege ammunition.
3. Any device not designed to deliver these types of ammunition is not considered a siege engine, and unless acceptable for use for combat archery, is not usable.
   (a) Man-powered trebuchets are considered Type B engines and must meet the requirements stated, with the exception that they must not be required to have a mechanical release or cocking device.
      i. These engines may fire up to 2 small siege projectiles, or 2?8 small arms projectiles, per shot.

9.1.2 Siege structures

Siege structures, such as towers or ramps, are defined as devices when they are used to support personnel but are not fitted with active weaponry.

9.2 Siege engine regulations

9.2.1 General

1. Engines and their projectiles must be inspected by a siege marshal before being used at that event and after any modifications are made to the engine during the course of an event.
2. All engines must not be able to shoot more than 74 metres. This is especially important in direct-fire weapons, where range greater than this often results in safety concerns involving extreme minimum-range impact.
3. Direct-fire engines must not be discharged against personnel within a range of 10 metres.
4. Engines must not be discharged while any non-crew person is within 1.5 metres of the travel path of moving parts (e.g., a trebuchet must not be discharged while a fighter is standing anywhere in the path of the arm, front or back).
5. Engines must be equipped with a safety device sufficient to prevent accidental firing if they are to be relocated while cocked.
   (a) Any engine without such a device is only allowed to be relocated while un-cocked.
6. Except for man-powered trebuchets, all siege engines must be fitted with an appropriate mechanical trigger mechanism that must be used for every shot.
7. Cannons or any replica of cannons are not allowed in SCA combat.
   (a) Engines may not use compressed or ignited gases or liquids or combusting materials of any kind to power projectiles.
8. Builders should attempt to visually and functionally recreate period siege engines.
   (a) Engines must be powered in a manner functionally consistent with their period counterparts.
   (b) When period power methods are unsafe or not feasible, alternative sources of power may be used.
9. Engines must be durable enough to survive the rigours of combat and, while they should not be struck with hand weapons, should withstand either being struck with a full-force blow or being run into by a combatant.
10. All engines must be free-standing and may not use an operator as part of their support structure. Operators are not included in measuring the footprint of an engine.
11. Siege engines must not have any bolts, or other projections which may reasonably be expected to contact persons if they fall on the engine, extend more than 1.3cm into a legal face grill.
    (a) Any items such as this must be covered with sufficient rigid material, a tennis ball, or a suitable rubber stopper, to prevent them from entering a legal face grill more than 1.3cm.

(b) Triggers, release hooks, or other firing mechanism components that would not normally be in a position that could cause injury should someone accidently fall on the engine, are exempt from this.

12. All siege engines and structures must be labelled for the purpose of identification in line with the requirements for arrows.

9.2.2 Siege engine materials

Any material approved for use in devices on the battlefield is allowed to be used in the construction of engines, provided that the materials are sufficient to ensure the safety of the engine. For safety, the following materials have special requirements:

9.2.2.0.1 Turnbuckles and eye bolts

When used in or attached to the source of power for an engine, these items must be rated to withstand 150% of the forces produced (e.g., if the cable attached to a turnbuckle will support 45 kilograms of tension, the turnbuckle is be rated at 67.5 kilograms static load). Hardware store and home centre hardware is often of low quality and rating, while aircraft or marine hardware is generally more appropriate.

9.2.2.0.2 Steel cable

While steel cable is useful for such functions as safety-tying a throwing arm, it must not be used as a bowstring for any type of siege engine.

9.2.2.0.3 All softwoods and non-laminated hardwoods

1. When used as the throwing arm for a catapult, trebuchet, or the bow arms of a torsion ballista, they must be secured against breakage with a minimum of glue-soaked sisal or jute cord wrapping (5 centimetre wraps every 15 centimetres) over a section of rope glued along the full length of the arm. This should keep the arm from leaving the engine should it break.
   (a) It is strongly recommended that all arms be wrapped in this manner, regardless of material used.
2. When used as the support for the main pivot axle(s) of a catapult, trebuchet, or torsion ballista, a minimum of two layers of wood, glued together with alternating grain directions, must be used in order to avoid operating stresses causing a separation of the support wood along the grain.
   (a) Using a structural metal plate through-bolted onto a single layer wooden timber is also an acceptable construction method if the axle passes through the metal plate.

9.3 Type A engines

Type A engines must:

1. Have a minimum footprint of 1.67 square meters (18 square feet).

2. Be able to deliver a large siege missile at least 37 meters (40 yards).
3. Have a mechanical cocking device, such as a winch or windlass and trigger and are not allowed to be cocked by hand.
4. Have a minimum crew of 3 people.
   (a) If crew size falls below minimum, the engine must not be operated.
5. Be able to fire 1 large siege projectile, or up to 5 small siege projectiles, or 2-20 small arms projectiles, per shot.

9.4 Type B engines

Type B engines must:

1. Have a minimum footprint of 1.1 square meters (12 square feet).
2. Be able to deliver a small siege missile at least 37 meters (40 yards).
3. Have a mechanical cocking device, such as a winch or windlass and trigger and are not allowed to be cocked by hand.
   (a) Man powered trebuchets are exempt from this requirement.
4. Have a minimum crew of 2 people.
   (a) If crew size fall below minimum, the engine must not be operated.
5. Be able to fire 1 small siege projectile, or 2-4 small arms projectiles, per shot.

9.5 Siege structures

1. Siege structures must:
   (a) Be able to support 135 kilograms for every 0.37 square metres of platform area.
   (b) Be equipped with railings or walls at least 0.91 metres tall and able to support 45 kilograms per 31 centimetres of railing length if the platform is more than 1 metre from the ground.
   (c) Be structurally stable (e.g., a wheeled siege tower should have a base big enough and wheels large enough to safely carry crew over the terrain of the field).
2. Battering rams and battering structures are allowed for use against authorised buildings and siege structures.
   (a) Using a battering ram against a human target is expressly forbidden.
   (b) Battering rams must be durable enough to withstand repeated impacts and light enough to be safe when carried or if dropped.
3. Siege structures that have a platform must have a base with a width and depth equal to or greater than 80% of the platform height.

(a) The platform may not be larger than the base, and may not extend past the base footprint in any direction.

(b) Structures that have a platform height of over 2.7 metres from standing surface to ground, must not have a platform that exceeds 75% of the base dimensions. For example, a tower that has a platform height of 3 metres must have a base that is no less than 2.4 metres in either direction. Additionally the platform dimensions are not allowed to exceed 75% of the base dimensions (e.g. a platform with an 2.4m x 2.4m base could only have a 1.8m x 1.8m platform).

4. Siege structures must not be made from industrial scaffolding, as it is not designed for the applications in which SCA combat operates.

10 Combat - Siege Ammunition

11 Siege ammunition

11.1 General

1. Siege engine ammunition must not be heavier than 0.45 kilograms in weight.
2. Siege class ammunition must be coloured with yellow tape as described below, in order to denote it as siege class ammunition.
3. Siege ammunition is not allowed to be fired from small arms or thrown by hand.
4. All projectiles must have the owner's name, and group clearly and legibly printed on it in English characters for identification.
5. Siege ammunition is only allowed to be constructed of the following materials:
   (a) Open-cell or closed-cell foam.
   (b) Tennis balls
      i. Tennis balls must be punctured with a hole less than 2 mm in diameter, A or a slit less than 37.5 mm in order to relieve internal pressure. AC rules list it as not greater than a 6mm hole and must not be slotted
   (c) High-density polyethylene (HDPE) pipe (commonly used as irrigation pipe) meeting ASTM D2239 (and minimum 25.4mm inner diameter) or ASTM D2737 (and minimum of 31.8mm outer diameter) and manufactured of PE3408, PE3608, PE3710 or PE4710 resin, or equivalent.
   (d) Cord.
   (e) Duct and filament tape.
   (f) Film canisters.
   (g) PVC reinforcement rings.
      i. Rings may not exceed 5 centimetres in length.
      ii. Missile shafts may not be made from PVC.
   (h) Leather.
   (i) Lightweight fabric such as broadcloth, trigger, or similar material.

11.2 Large siege ammunition

1. Large siege ammunition is intended to simulate large, heavy projectiles normally used as anti-structure missiles (e.g., 100+kg sandstone rocks used in the largest of engines). These missiles are simulated with 0.45kg "rocks."
2. Large siege ammunition must:
   (a) Be constructed of fabric spheres filled with light-density foam and taped with filament and duct tape for protection.
   (b) Be a minimum of 165mm in diameter.
   (c) Have at least 50% of their surfaces covered with yellow tape.

11.3 Small siege ammunition

Small siege ammunition is intended to simulate smaller, lighter projectiles used as light anti-structure and antipersonnel missiles (e.g., ballista javelins and ˜5 kg stones as used in Perriers). Permissible small siege projectiles include:

11.3.1 4-tennis-ball clusters

1. The tennis balls must be punctured and either:
   (a) Secured with filament tape and duct tape or
   (b) Tied together with a cord passing through each ball and wrapped with duct tape.
2. At least 50% of their surfaces must be covered with yellow tape.

11.3.2 Ballista bolts

1. Ballista bolts must have a shaft made from HDPE pipe (as per 3.1.5).
2. They must have a tip made with at least 76mm of resilient material between the end of the shaft and the striking surface, must be at least 64mm in diameter, and must have at least 25.4mm of progressive give without bottoming out on the shaft.
3. The end of the shaft that the tip is secured to must be capped with a minimum of 4mm thick leather, or a 35mm film container (or similar item), securely fastened with filament tape.
   (a) The tip must be secured to the shaft with filament tape that completely covers the foam, then covered with yellow tape.
4. The back end of the bolt may have a short (less than 51mm in length) piece of PVC pipe (or other similar non-brittle, non-metallic, lightweight material), that is securely attached to reinforce this area.
5. Bolts must be stable in flight or have fletching made from flexible material to make them stable in flight.

6. They must be at least 122cm in length.
7. Bolts made with HDPE pipe that is not yellow in colour must have their shafts and striking surfaces covered completely with yellow tape, except for an area that is just large enough to show a full set of the specifications imprinted on the pipe's surface.
8. Shafts made from yellow HDPE pipe must not be covered with tape, and the markings must be visible.
9. 1/2 tennis balls may be attached to the foam tip to cover the striking surface as long as they are an integral part of the tip and there is at least 25.4mm of progressive give after the 1/2 tennis ball is attached.

11.4 Specialty siege ammunition

1. Specialty siege ammunition is intended to simulate specialty ammunition (e.g., flaming oil pots or flaming javelins) or effect weapons (e.g., diseased animal corpses or the heads of decapitated messengers).
2. Specialty missiles will have damage determined in the scenario rules. Most effect weapons will have little or no damage potential, and therefore should be used sparingly.
3. Specialty siege ammunition may be used as long as it does not exceed the weight or construction limitations of the approved ammunitions.

12 Combat - Engine And Structure Inspection

13 Engine and Structure Inspection

This section is already entirely incorporated into to the Armoured Combat rules. See the section on Siege engine and structure inspection in the Armoured Combat Marshals' handbook.

14 Combat - Siege Engine Operation

15 Siege Engine Operation

1. If you are operating a siege engine in combat, you must be armoured to Lochac's armour requirements for combat archers.
2. Siege engine crews must be made up of combatants who are authorised in siege and are familiar with the engine that they are operating.
3. Siege engine crews must inspect their engine for wear, stress, and fatigue before each battle and, if possible, during holds.
4. During holds, you are not allowed to cock, load, move, or in any other way make your engine ready. Already covered in AC rules - 4.5.3.g and 4.5.6.b
5. Siege engine crews must immediately secure their engine if it becomes unsafe.
   (a) You must remove the engine from the field at your earliest opportunity.
6. Siege engine crews are responsible for the safe operation of their engine during combat.
   (a) You must make sure that crew members are clear of moving parts and that non-crew personnel are not directly in front of the engine and not within 5 feet (1.52m) of the travel path of moving parts before discharging your weapon.
7. Siege engine crews are responsible for the safety and condition of their ammunition, and must visually inspect each round for damage before it is fired.
   (a) Ammunition that has been inspected prior to the battle does not need to be re-inspected before it is fired, but any ammunition that has been retrieved from the field must be re-inspected.
8. Engines must not fire ammunition that is not designed for that weapon.
9. It is recommended that siege engine crews give verbal commands for each phase of engine operation.
10. Moved from Siege Ammunition Damage as it's about firing it. While it would be preferable to not have to impose any arbitrary maximum rate of fire, if there are a large number of siege engines at an event, it may be necessary for reasons of fair game play. If so, the following is recommended:
    (a) Type A engines should be allowed to fire no more than 1 time per minute.
    (b) Type B engines should be allowed to fire no more than 2?3 times per minute.